Work Order ID 106260

106260

August-28-13 12:43:14 PM

Item ID: D6101-007 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Saddle Billet

Start Date: 8/28/13 **Start Qty:** 20.00 *20* **Cust Item ID:**

Required Date: 8/28/13 **Req'd Qty:** 20.00 *20* **Customer:**

Reference:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** MLJ **Date:** 13-08-30 **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D6101	Rev B

100 0.00

100

Purchasing

Purchasing

PURCHASING

CL 13/09/09 20

Memo 0.00

Issue P/O: 21243

a)Description: Alluminum billet
b) 7.750" x 8.250" x 2.50" thick
c) Tolerance on all dimensions are +0.030"/-0.000"
d) Grain direction along 7.750" length
e) Material: 7075-T7351 (QQ-A-250/12)
f) Material certification required

110 Receive & Inspect for Damage & Mat'l Certs 0.00

110

Packaging

Packaging

9/3/20 20

Memo 0.00

Ensure material certification is attached

DQA: _____ Date: _____

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

- Skid-tube ☐
- Machining ☐
- Thermoforming ☐
- Large Fab ☐
- Crosstube ☐
- Small Fab ☐
- Finishing ☐
- Composite ☐
- Water Jet ☐
- Prod. Eng. Coor. ☐
- Rec/Store/Packaging ☐
- Supplier ☐
- Engineering ☐
- Quality ☐
- Other ☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

- ☐ Bending
- ☐ Centre Not Concentric to O/S
- ☐ Cracks
- ☐ Crushed/Crimped
- ☐ Cuffs
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
- ☐ Ripples in Bend
- ☐ Torque Waves in Extrusion
- ☐ Turning Sequence
- ☐ Wave/Twist in Tube

General

- ☐ Bend
- ☐ BOM/Route
- ☐ Broken/Damaged
- ☐ Burrs
- ☐ Contamination
- ☐ Countersink
- ☐ Cut Too Short
- ☐ Drill Holes
- ☐ Drawing
- ☐ Finish
- ☐ Folio
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete
- ☐ Instructions Incomplete/Unclear
- ☐ Maintenance
- ☐ Mislabeled
- ☐ Misread
- ☐ Offset
- ☐ Out of Calibration
- ☐ Out of Sequence
- ☐ Outside Dimensions
- ☐ Ovalized
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge
- ☐ Pressure/Forced
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other _____

Work Order ID 106260

106260

August-28-13 12:43:14 PM

Item ID: D6101-007 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Saddle Billet

Start Date: 8/28/13 **Start Qty:** 20.00 *20*
Required Date: 8/28/13 **Req'd Qty:** 20.00 *20*
Reference:

Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
120			mk 13/09/25			20	0		
QC	**Memo**	0.00							
Quality Control	Ensure Material certification comply to Dwg D6101								
130	Identify as per dwg & Stock Location: 44	0.00	mk 13/09/25						
130						20	0		
Packaging	**Memo**	0.00							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140						MCJ 13-09-27			
QC	**Memo**	0.00							
Quality Control									

ql 13-09-26

DQA: _____ Date: _____

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

- Skid-tube ☐
- Machining ☐
- Thermoforming ☐
- Large Fab ☐
- Crosstube ☐
- Small Fab ☐
- Finishing ☐
- Composite ☐
- Water Jet ☐
- Prod. Eng. Coor. ☐
- Rec/Store/Packaging ☐
- Supplier ☐
- Engineering ☐
- Quality ☐
- Other ☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

- ☐ Bending
- ☐ Centre Not Concentric to O/S
- ☐ Cracks
- ☐ Crushed/Crimped
- ☐ Cuffs
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
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- ☐ Turning Sequence
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General

- ☐ Bend
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- ☐ Cut Too Short
- ☐ Drill Holes
- ☐ Drawing
- ☐ Finish
- ☐ Folio
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete
- ☐ Instructions Incomplete/Unclear
- ☐ Maintenance
- ☐ Mislabeled
- ☐ Misread
- ☐ Offset
- ☐ Out of Calibration
- ☐ Out of Sequence
- ☐ Outside Dimensions
- ☐ Ovalized
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge
- ☐ Pressure/Forced
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other _____

Picklist Print

August-28-13 12:43:18 PM

Work Order ID: 106260 *106260*

Parent Item: D6101-007 *D6101-007*

Parent Item Name: Saddle Billet

Start Date: 8/28/13 **Required Date:** 8/28/13

Start Qty: 20.00 **Required Qty:** 20.00

Comments: IPP A: 01.05.04New IsueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007P		Purchased	No			110	Each	0.0000	1	20			
D6101-007P									**				
7075-T7351 8.25X7.75X2.5													

4/3/20 (20)

DQA: _____ Date: _____

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

- Skid-tube ☐
- Crosstube ☐
- Water Jet ☐
- Engineering ☐
- Machining ☐
- Small Fab ☐
- Prod. Eng. Coor. ☐
- Quality ☐
- Thermoforming ☐
- Finishing ☐
- Rec/Store/Packaging ☐
- Other ☐
- Large Fab ☐
- Composite ☐
- Supplier ☐
- ☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

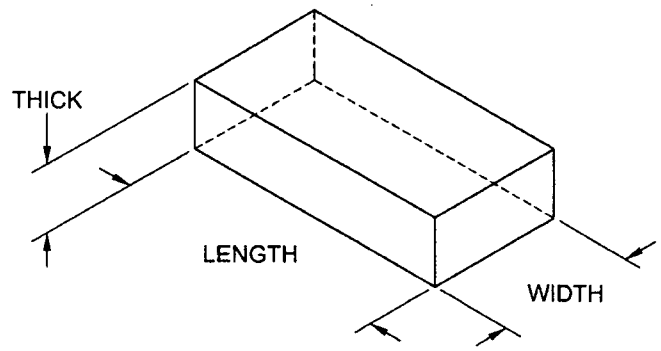
Landing Gear

- ☐ Bending
- ☐ Centre Not Concentric to O/S
- ☐ Cracks
- ☐ Crushed/Crimped
- ☐ Cuffs
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
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- ☐ Folio
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete
- ☐ Instructions Incomplete/Unclear
- ☐ Maintenance
- ☐ Mislabeled
- ☐ Misread
- ☐ Offset
- ☐ Out of Calibration
- ☐ Out of Sequence
- ☐ Outside Dimensions
- ☐ Ovalized
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge
- ☐ Pressure/Forced
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other _____

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

(B) ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
(B) D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15 AW

REV.	DESCRIPTION	BY	DATE
B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30

DESIGN	CP
DRAWN	RF
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	09.04.23

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D6101 REV. B
SHEET 1 OF 1
TITLE SADDLE BILLET, 7075 SCALE NTS

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13-08-30

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO21243

Purchase Order Date 9/9/2013
PO Print Date 9/9/2013

Order From : VU-THY001

THYSSENKRUPP MATERIALS CA LTD
Q/A VPK METAL
C/O T27540
PO BOX 4275 POSTAL A
TORONTO, ON M5W 5V8
CANADA

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED (613) 369-1897

Contact Name		**Buyer**	Chantal Lavoie
Vendor Phone	905-669-9444	**Customer POID**	
		Customer Tax #	10127-2607
Ship To Contact		**Terms**	Net 30
Ship To Phone		**Currency**	USD
Ship Via:	Yours ppd	**FOB**	DDP – (Delivered Duty Paid)
Ship Acct:			

Line Nbr	Reference / Vendor Part Number / Line Comments / Delivery Comments	Description/ Mfg ID	Req Date/ Taxable / Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D6101-005P	7075-T7351 8.25X5.0X2.5	9/13/2013 Yes 9/13/2013		40.00 Each	$32.94	$1,317.60
	AS PER DWG D6101 REV. B B106034 MATERIAL: 7075-T7351 (QQ-A-250/12) SIZE: 5.00" X 8.250" X 2.50" THICK GRAIN DIRECTION ALONG: 5.00" LENGTH TOLERANCE ON ALL DIMENSIONS ARE +0.030"/-0.000"						
						Line Total:	**$1,317.60**
2	D6101-007P	7075-T7351 8.25X7.75X2.5	9/13/2013 Yes 9/13/2013		20.00 Each	$51.05	$1,021.00
	AS PER DWG D6101 REV. B B106260 MATERIAL: 7075-T7351 (QQ-A-250/12) SIZE: 7.750" X 8.250" X 2.50" THICK GRAIN DIRECTION ALONG: 7.750" LENGTH TOLERANCE ON ALL DIMENSIONS ARE +0.030"/-0.000"						

PO Instructions: LONG TERM AGREEMENT
(LTA#131001)

Note:

B I L L O F L A D I N G

No: PEC 841167
Ship Date 17Sep13 at 8:26 From PFW
Probill
Via VIM DELIVERY
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)

Ship From:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

Ship To: (1)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7
Tel: 613-632-9577 Fax: 613-632-1053

Sold To: (20115)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7

==========

B I L L O F L A D I N G

1) Our Order PEC-603399- 1 Your PO # 21243
Part # D-6101 REV B B106034 Rel #
ALUMINUM PLATE 7075T7351
2.50" THICK X 5.0000" X 8.2500"
**********GRAIN DIRECT TOWARD 5.00 DIM**********

Heat Number	Tag No	Quantity	PCS	Wt LBS
315491	217011	11.46 SFT	40	426

2) Our Order PEC-603399- 2 Your PO # 21243
Part # D-6101 REV B B106260 Rel #
ALUMINUM PLATE 7075T7351
2.50" THICK X 7.7500" X 8.2500"
******GRAIN DIRECTION TOWARD 7.750" DIM**********

Heat Number	Tag No	Quantity	PCS	Wt LBS
315491	217013	8.88 SFT	20	328

	Tags	PCS	LBS
TOTAL:	2	60	754

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
TO SHIPPING.
ATTN: CHANTAL/LINDA
** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
** REFERENCED ON IT **

TOTAL TOTAL ITEMS (1&2) 1 SKID G.W. 774 LBS

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE RAPPORTÉES IMMÉDIATEMENT.
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY.
RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT.
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE

B I L L O F L A D I N G

Ship From:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

Ship To: (1)
DART AEROSPACE

B I L L O F L A D I N G No: PEC 841167
Ship Date 17Sep13 at 8:26 From PFW
Probill
Via VIM DELIVERY
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

==========

B I L L O F L A D I N G

*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA
CONCORD, ONT.* *** 9:00 AM TO 4:00 PM ***
**** TEL. 800-926-2600 ****

* WE STOCK STAINLESS STEEL *
* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

***PLEASE NOTE A $25.00 ENERGY SURCHARGE WILL BE
ADDED TO EVERY ORDER.***

*TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE RAPPORTÉES IMMÉDIATEMENT.
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY
RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT.
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE

THYSSENKRUPP MATERIALS NA

DART AEROSPACE
ALUMINUM PLATE 7075T7351
2.50" THICK X 5.0000" X 8.2500"
PART NO. D-6101 REV B B106034

PO/Rel 21243
We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-841167-001 17Sep13
Signed by: _____ Pg 1/3

Constellium

Accredited Nadcap Materials Testing Laboratory

CERTIFIED TEST REPORT
Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES, INC.
5 STERLING DRIVE
WALLINGFORD CT
06492-2438

COPPER & BRASS SALES
P.O. BOX 5116
SOUTHFIELD MI
48086

COPPER&BR F50702 4776 INCLUSION SERIAL#: 20121115F50702 PAGE 1 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM				Constellium ORDER NO.	
5400152773				235-713071	
ALLOY	CLAD	TEMPER	GAUGE	WIDTH	LENGTH
7075	00	T7351	2.50000	60.500	144.500

ITEM ORDERED
DIST. AEROSPACE/COMM.
SPEC PLATE, SAWED MILL

CUSTOMER SPECIFICATION
EAC-MS-1011E

PART NUMBER	BL NUMBER	DATE SHIPPED
ALFLR00249	F50700	11/15/12

WEIGHT SHIPPED	NO. OF PIECES	GOVT. CONTRACT NO.
8,980	4	

CERTIFICATION
"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."
Constellium Rolled Products Ravenswood, LLC
Rt 2 South, Century Road
P.O. BOX 68
RAVENSWOOD, WV 26164 USA
Rodney J. Felty
Rodney J. Felty - Laboratory Manager

COND % IACS

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I. MIN.	ULTIMATE STRENGTH K.S.I. MAX.	YIELD STRENGTH K.S.I. MIN.	YIELD STRENGTH K.S.I. MAX.	ELONGATION % MIN.	ELONGATION % MAX.	COND % IACS MIN	COND % IACS MAX
315491			***** T7351				*****			
	LT	2	70.6	70.8	58.6	59.0	12.0	12.5	40.8	41.2

All material contained in lot 315491 was cast and manufactured in the USA.

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS

ASTM B594 REV 09 2009 CLASS A

AMS 4078J,ASTMB209-10,MMS159T,AMS-QQ-A-250/12,CMMP025U
AMSSTD215498,BSS7055A,GAMPS9101B,PS21211L,DPS4.713AH04

CHEM COMP	ALLOY	SILICON MIN.	SILICON MAX.	IRON MIN.	IRON MAX.	COPPER MIN.	COPPER MAX.	MANGANESE MIN.	MANGANESE MAX.	MAGNESIUM MIN.	MAGNESIUM MAX.	CHROMIUM MIN.	CHROMIUM MAX.	ZINC MIN.	ZINC MAX.	TITANIUM MIN.	TITANIUM MAX.	OTHERS EACH	OTHERS TOTAL MAX.
	SEE ACTUAL CHEMICAL COMPOSITION																		
	ALUMINUM REMAINDER																		

THYSSENKRUPP QC1

P-360-1550 (08/11)

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER
CstAr
Wgt.: 1,977.698 LB

Del.: 2402293218
CstOr VIM-618575
Date 02/04/2013

John R. Zambetti

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075T7351
2.50" THICK X 5.0000" X 8.2500"
PART NO. D-6101 REV B B106034

PO/Rel 21243

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-841167-001 17Sep13

Signed by:_____ Pg 2/3

Constellium

Accredited Nadcap Materials Testing Laboratory

CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES, INC.
5 STERLING DRIVE
WALLINGFORD CT
06492-2438

COPPER & BRASS SALES
P.O. BOX 5116
SOUTHFIELD MI
48086

COPPER&BR F50702 4776 INCLUSION SERIAL#: 20121115F50702 PAGE 2 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM				Constellium ORDER NO.	
5400152773				235-713071	
ALLOY	CLAD	TEMPER	GAUGE	WIDTH	LENGTH
7075	00	T7351	2.50000	60.500	144.500

ITEM ORDERED
DIST. AEROSPACE/COMM.
SPEC PLATE, SAWED MILL

CUSTOMER SPECIFICATION
EAC-MS-1011E

PART NUMBER	BL NUMBER	DATE SHIPPED
ALFLR00249	F50700	11/15/12

WEIGHT SHIPPED	NO. OF PIECES	GOVT. CONTRACT NO.
8,980	4	

CERTIFICATION

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC
Rt 2 South, Century Road
P.O. BOX 68
RAVENSWOOD, WV 26164 USA

Rodney J. Felty
Rodney J. Felty - Laboratory Manager

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I. MIN.	ULTIMATE STRENGTH K.S.I. MAX.	YIELD STRENGTH K.S.I. MIN.	YIELD STRENGTH K.S.I. MAX.	ELONGATION % MIN.	ELONGATION % MAX.	COND % IACS MIN	COND % IACS MAX
ACTUAL CHEMICAL COMPOSITION										
315491	C SI= 0.06 FE= 0.13 CU= 1.50 MN= 0.04 MG= 2.55 CR= 0.20 ZN= 5.49 TI= 0.02 ZR= 0.01 OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER									

CHEM COMP	ALLOY	SILICON MIN.	SILICON MAX.	IRON MIN.	IRON MAX.	COPPER MIN.	COPPER MAX.	MANGANESE MIN.	MANGANESE MAX.	MAGNESIUM MIN.	MAGNESIUM MAX.	CHROMIUM MIN.	CHROMIUM MAX.	ZINC MIN.	ZINC MAX.	TITANIUM MIN.	TITANIUM MAX.	OTHERS EACH MAX.	OTHERS TOTAL MAX.
	SEE ACTUAL CHEMICAL COMPOSITION																		
	ALUMINUM REMAINDER																		

P-660-155D (06/11)

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER Del.: 2402293218

CstAr CstOr VIM-618575

Wgt.: 1,977.698 LB Date 02/04/2013

John R. Zambetti

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075T7351
2.50" THICK X 5.0000" X 8.2500"
PART NO. D-6101 REV B B106034

PO/Rel 21243

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-841167-001 17Sep13

Signed by:_____ Pg 3/3

Constellium

Accredited Nadcap Materials Testing Laboratory

CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES, INC.
5 STERLING DRIVE
WALLINGFORD CT
06492-2438

COPPER & BRASS SALES
P.O. BOX 5116
SOUTHFIELD MI
48086

COPPER&BR F50702 4776 INCLUSION SERIAL#: 20121115F50702 PAGE 3 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM	Constellium ORDER NO.
5400152773	235-713071

ALLOY	CLAD	TEMPER	GAUGE	WIDTH	LENGTH
7075	00	T7351	2.50000	60.500	144.500

ITEM ORDERED
DIST. AEROSPACE/COMM.
SPEC PLATE, SAWED MILL

CUSTOMER SPECIFICATION
BAC-MS-1011E

PART NUMBER	BA NUMBER	DATE SHIPPED
ALFLR00249	F50700	11/15/12

WEIGHT SHIPPED	NO. OF PIECES	GOVT. CONTRACT NO.
8,980	4	

CERTIFICATION

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC
Rt 2 South, Century Road
P.O. BOX 68
RAVENSWOOD, WV 26164 USA

Rodney J. Felty
Rodney J. Felty - Laboratory Manager

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I. MIN.	ULTIMATE STRENGTH K.S.I. MAX.	YIELD STRENGTH K.S.I. MIN.	YIELD STRENGTH K.S.I. MAX.	ELONGATION % MIN.	ELONGATION % MAX.	COND % IACS MIN	COND % IACS MAX

THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.

CHEMISTRY BY OES: ARKSPARK

CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT.

WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399.

WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557.

Mark Paperwork: ALFLR00249

DUNS Number: 090570149; CAGE Code: 1YWL9

Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product.

"END OF CERTIFICATION"

CHEM COMP	ALLOY	SILICON MIN.	SILICON MAX.	IRON MIN.	IRON MAX.	COPPER MIN.	COPPER MAX.	MANGANESE MIN.	MANGANESE MAX.	MAGNESIUM MIN.	MAGNESIUM MAX.	CHROMIUM MIN.	CHROMIUM MAX.	ZINC MIN.	ZINC MAX.	TITANIUM MIN.	TITANIUM MAX.	OTHERS EACH MAX.	OTHERS TOTAL MAX.
	SEE ACTUAL CHEMICAL COMPOSITION																		
	ALUMINUM REMAINDER																		

P-350-1553 (06/11)

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER Del.: 2402293218

CstAr CstOr VIM-618575

Wgt.: 1,977.698 LB Date 02/04/2013

John K. Jambetti